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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/826,827	04/06/2001	Kazuhiro Ikurumi	2001-0409A	5095

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EXAMINER

TAKAOKA, DEAN O

ART UNIT PAPER NUMBER

2817

DATE MAILED: 04/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/826,827

Applicant(s)

IKURUMI ET AL.

Examiner

Dean O Takaoka

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on March 19, 2003 by Amendment (A).
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 8-13 is/are rejected.
- 7) ☒ Claim(s) 7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 March 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Specification

The disclosure is objected to because of the following informalities: the symbol "of" (Substitute specification; page 2 – 0005) is believed to be a typographical error and should be "pf", e.g. pico farads.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 1, 2, 3, 6, and 8 – 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Duan et al. (U.S. Patent No. 6,028,564) in view of Edward et al. (U.S. Patent No. 4,825,220).

Claim 1:

Duan et al. (Fig. 6B) shows two stubs (710, 720), with stub (720) being longer than the other.

Duan et al. is silent with respect to the well-known cutting method for making the stubs.

Edward et al. shows a similar impedance matching circuit comprising stubs (Zl and Zab – Figs. 2A and 2B; col. 7, lines 43-58) which are tuned by well-known cutting

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methods such as laser trimming the stubs shown in Figs. 2A and 2B, e.g. theta ab, thus making an auxiliary cut (col. 6, lines 41-54).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have tuned the stubs of Duan et al. using the specific well-known art-recognized equivalent cutting method of laser trimming disclosed by Edward et al. Such a use of tuning the stubs would have been a mere use well-known art-recognized equivalent methods for creating and tuning the stub such as laser trimming, thus suggesting the obviousness of the modification.

Claim 2:

Edward et al. teaches the calculation and testing of design, further where adjustment by laser trimming is accomplished where the actual value may be different from the target value (col. 6, lines 41-54).

Claims 3 and 6:

Duan et al. (Fig. 6A) teaches tuning the stub may be made with a length and/or width adjustment (col. 11, lines 18-25) and Edward et al. teaches tuning the stub by laser trimming, thus the trimmed portion obviously made along the width of the stub.

Claim 8:

Duan et al. shows different stub lengths (710, 720 – Fig. 7A), where Edward et al. teaches one stub being larger than the expected final value and the other stub being lower than the expected final value and adjusting both stubs by removal to the correct value (col. 6, line 48-54).

Claims 9 and 10:

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Duan et al. (Fig. 6A) teaches tuning the stub may be made with a length and/or width adjustment (col. 11, lines 18-25) and Edward et al. teaches tuning the stub by laser trimming, thus the trimmed portion obviously made along the width of the stub (discussed above in the reasons for rejection of claims 3 and 6 above).

Claim 11:

Duan et al. teaches tuning the stub by the width and thickness (Fig. 6 with respect to Figs. 7A and 7B) where Edward et al. teaches fine adjustment by laser trimming (col. 6, lines 41-54).

Claim 12:

Both Duan et al. and Edward et al. teach the adjustment of impedance. Further Edward et al. shows a normalized VSWR (Fig. 3) and teaches the adjustment based on a target value (discussed in the reasons for rejection of claim 1 above), thus obviously having an impedance variation on a Smith Chart.

Claim 13:

Edward et al. teaches laser trimming (discussed in the reasons for rejection of claim 1 above).

Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Duan et al. and Edward et al. in view of Saunders et al. (U.S. Patent No. 6,343,369).

Claims 4 and 5:

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Duan et al. and Edward et al. teach the method for matching impedance comprising tuned stubs using the well-known method of trimming the stub end, discussed above in the reasons for rejection of claim 3.

Duan et al. and Edward et al. do not teach matching impedance comprising tuned stubs using comb-teeth-like cuts (claim 4) or staggered cuts (claim 5).

Saunders et al. teaches a similar method for matching impedance comprising tuned stubs by laser trimming (Fig. 16) comprising the well-known art-recognized equivalent method of using comb-teeth-like cuts and staggered cuts (Figs. 23 and 24A).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have substituted the well-known method of tuning the stub end to control impedance disclosed by Duan et al. and Edward et al. with the well-known art-recognized equivalent method of tuning the stubs to control impedance comprising comb-teeth-like cuts and staggered cuts disclosed by Sanders et al. Such a modification would have been a mere substitution of well-known art-recognized equivalent methods for tuning stubs to control impedance (where Saunders et al. shows maintaining controlled impedance in the impedance region illustrated by Fig. 23 – col. 21, line 3-15) thus suggesting the obviousness of the modification.

Response to Arguments

Applicant's arguments with respect to claims 1 – 13 have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

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Claim 7 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

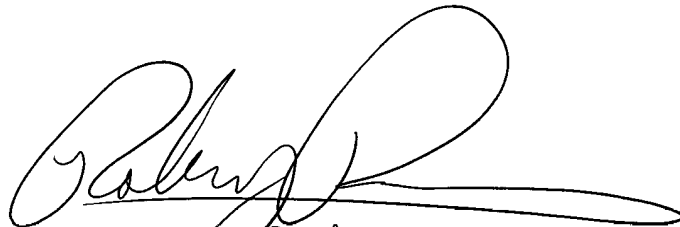
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dean O Takaoka whose telephone number is (703) 305-6242. The examiner can normally be reached on 8:30a - 5:00p Mon - Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on (703) 308-4909. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

dot
April 11, 2003



Robert Pascal
Supervisory Patent Examiner
Technology Center 2800